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OM protein - protein search, using sw model

Run on: January 7, 2002, 16:05:25 ; Search time 77.81 seconds
(without alignments)
21.676 Million cell updates/sec

Title: US-08-569-749-8
Perfect score: 267
Sequence: 1 LAKAGFYIIGPGDRVACFAC.....WEPKDMAMSEHLRHPKCP 46

Scoring table: BLOSUM62
Gapop 10.0 , Gapext 0.5

Searched: 100059 seqs, 36664827 residues
Total number of hits satisfying chosen parameters: 100059

Minimum DB seq length: 0
Maximum DB seq length: 200000000
Post-processing: Minimum Match 0%
Maximum Match 100%
Listing first 45 summaries

Database : SWISSPROT_39:*

Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.

SUMMARIES

Result No.	Score	Query Match	Length	ID	Description
1	267	100.0	604	1 BIR2_HUMAN	Q13489 homo sapien
2	254	95.1	358	1 P1AP_PIG	O62640 sus scrofa
3	248	92.9	618	1 BIR3_HUMAN	O13490 homo sapien
4	247	92.5	612	1 BIR3_MOUSE	O62210 mus musculu
5	235	88.0	600	1 BIR2_MOUSE	O08863 mus musculu
6	186	69.7	611	1 BIR1_CHICK	O90660 gallus gall
7	182	68.2	497	1 BIR4_HUMAN	P98170 homo sapien
8	177	66.3	496	1 BIR4_MOUSE	O09989 mus musculu
9	175	63.3	496	1 BIR4_RAT	O24307 rattus norv
10	145	54.3	498	1 BIR2_DROME	O24307 drosophila
11	141	52.8	1402	1 BIR3_MOUSE	O91153 mus musculu
12	141	52.8	1403	1 BIR1_HUMAN	O13075 homo sapien
13	141	52.8	1403	1 BIR4_MOUSE	O91046 mus musculu
14	141	52.8	1403	1 BIR4_MOUSE	O91046 mus musculu
15	141	52.8	1403	1 BIR4_MOUSE	O91046 mus musculu
16	138	51.7	1447	1 BIR4_MOUSE	O91046 mus musculu
17	135	50.6	268	1 BIR3_MOUSE	P14373 oryza pascu
18	131	49.1	275	1 BIR3_MOUSE	P14373 oryza pascu
19	129	48.3	438	1 BIR3_MOUSE	P14373 oryza pascu
20	122.5	45.9	4829	1 BIR6_HUMAN	O24306 drosophila
21	112	41.9	239	1 BIR6_HUMAN	O24306 drosophila
22	105.5	39.5	140	1 BIR3_MOUSE	O91046 mus musculu
23	105.5	39.5	142	1 BIR3_MOUSE	O91046 mus musculu
24	103	38.6	997	1 BIR1_MOUSE	O91046 mus musculu
25	93	34.8	286	1 BIR1_MOUSE	O91046 mus musculu
26	92.5	34.6	142	1 BIR3_MOUSE	O91046 mus musculu
27	90	33.7	275	1 BIR3_MOUSE	O91046 mus musculu
28	72.5	27.2	224	1 BIR3_MOUSE	O91046 mus musculu
29	69.5	26.0	224	1 BIR3_MOUSE	O91046 mus musculu
30	66.5	24.9	224	1 BIR3_MOUSE	O91046 mus musculu
31	66.5	24.9	224	1 BIR3_MOUSE	O91046 mus musculu
32	66.5	24.9	224	1 BIR3_MOUSE	O91046 mus musculu
33	60	22.5	249	1 BIR3_MOUSE	O91046 mus musculu

34	57.5	21.5	278	1 BIR3_MOUSE	O91046 mus musculu
35	56.5	21.2	706	1 BIR3_MOUSE	O91046 mus musculu
36	56.5	21.2	2236	1 BIR3_MOUSE	O91046 mus musculu
37	55	21.0	1004	1 BIR3_MOUSE	O91046 mus musculu
38	55	20.6	1433	1 BIR3_MOUSE	O91046 mus musculu
39	54	20.2	181	1 BIR3_MOUSE	O91046 mus musculu
40	54	20.2	606	1 BIR3_MOUSE	O91046 mus musculu
41	54	20.2	606	1 BIR3_MOUSE	O91046 mus musculu
42	54	20.2	608	1 BIR3_MOUSE	O91046 mus musculu
43	54	20.2	608	1 BIR3_MOUSE	O91046 mus musculu
44	54	20.2	608	1 BIR3_MOUSE	O91046 mus musculu
45	53.5	20.0	563	1 BIR3_MOUSE	O91046 mus musculu

ALIGNMENTS

RESULT 1
ID BIR2_HUMAN STANDARD: PRT: 604 AA.
AC Q13489; Q16628; Q9UP46;
DT 01-NOV-1997 (Rel. 35, Created)
DT 01-NOV-1997 (Rel. 35, Last sequence update)
DT 20-AUG-2001 (Rel. 40, Last annotation update)
DE BACULOVIRAL IAP REPEAT-CONTAINING PROTEIN 1 (INHIBITOR OF APOPTOSIS
DE PROTEIN 1) (H1AP1) (H1AP-1) (C-IAP2) (TNFR2-TRAF SIGNALING COMPLEX
DE PROTEIN 1) (IAP HOMOLOG C).
GN BIR2 OR API1 OR IAP1 OR IAP1C.
OS Homo sapiens (Human).
OC Eukaryota; Metazoa; Chordata; Vertebrata; Euteleostomi;
OC Mammalia; Eutheria; Primates; Catarrhini; Homiidae; Homo.
OX NCBI_TaxID:9606;
RN [1]
RP MEDLINE-96128127; PubMed-8548810;
RA Rothe M., Pan M.-G., Henzel W.J., Ayres T.M., Goeddel D.V.;
RT "The TNFR2-TRAF signaling complex contains two novel proteins related
RL Cell 83:1243-1252(1995).
RN [2]
RP SEQUENCE FROM N.A.
RC TISSUE=Liver;
RX MEDLINE-96149249; PubMed-8552191;
RA Liston P., Roy N., Yamai K., Lefebvre C., Baird S., Chertion-Horvat G.,
RT Farahani R., McLean M., Ikeda J., Mackenzie A., Korneluk R.G.;
RT "Suppression of apoptosis in mammalian cells by NAIP and a related
RL family of IAP genes".
RN Nature 379:349-353(1996).
RN [3]
RP SEQUENCE FROM N.A.
RC TISSUE=Fetal liver;
RX MEDLINE-96209843; PubMed-8643514;
RA Uren A.G., Pakusch M., Hawkins C.J., Puls K.L., Vaux D.L.;
RT "Cloning and expression of apoptosis inhibitory protein homologs that
RT function to inhibit apoptosis and/or bind tumor necrosis factor
RT receptor-associated factors".
RL Proc. Natl. Acad. Sci. U.S.A. 93:4974-4978(1996).
RN [4]
RP SEQUENCE FROM N.A.
RX MEDLINE-9925096; PubMed-10233894;
RA Horroczko J., Fontijn R.D., van Zonneveld A.J., de Vries C.J.,
RT ten Cate J.W., Pannekoek H.;
RT "Vascular endothelial genes that are responsive to tumor necrosis
RT factor-alpha in vitro are expressed in atherosclerotic lesions
RT including inhibitor of apoptosis protein-1, stannin, and two novel
RT genes".
RL Blood 93:3418-3431(1999).
RN [5]
RP FUNCTION: APOPTOTIC SUPPRESSOR. THE BIR MOTIFS REGION INTERACTS
CC WITH TNF RECEPTOR ASSOCIATED FACTORS 1 AND 2 (TRAF1 AND TRAF2) TO
CC FORM AN HETEROMERIC COMPLEX, WHICH IS THEN RECRUITED TO THE TUMOR
CC NECROSIS FACTOR RECEPTOR 2 (TNFR2).
CC -1- SUBCELLULAR LOCATION: CYTOPLASMIC (POTENTIAL).
CC -1- TISSUE SPECIFICITY: HIGHLY EXPRESSED IN FETAL LUNG, AND KIDNEY. IN

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CC THE ADULT, EXPRESSION IS MAINLY SEEN IN LYMPHOID TISSUES.
CC INCLUDING SPLEEN, THYMUS AND PERIPHERAL BLOOD LYMPHOCYTES.
CC -1- SIMILARITY: BELONGS TO THE IAP FAMILY.
CC -1- SIMILARITY: CONTAINS 3 BIR REPEATS.
CC -1- SIMILARITY: CONTAINS 1 CARD DOMAIN.
CC -1- SIMILARITY: CONTAINS 1 RING-TYPE ZINC FINGER.
CC -----
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CC -----
DR EMBL: LA9433; AAC41943.1; -
DR EMBL: U45878; AAC50371.1; -
DR EMBL: U37546; AAC50507.1; -
DR EMBL: AF070674; AAC83232.1; -
DR MIM: 601712; -
DR InterPro: IPR001370; BIR.
DR InterPro: IPR001315; CARD.
DR InterPro: IPR001841; ZnF_ring.
DR Pfam: PF00653; BIR; 3.
DR Pfam: PF00619; CARD; 1.
DR Pfam: PF00097; zf-C3HC4; 1.
DR SMART: SM00238; BIR; 3.
DR SMART: SM00114; CARD; 1.
DR SMART: SM00184; RING; 1.
DR PROSITE: PS01282; BIR_REPEAT_1; 3.
DR PROSITE: PS50143; BIR_REPEAT_2; 3.
DR PROSITE: PS50209; CARD; 1.
KW Apoptosis; zinc-finger; Repeat.
FT REPEAT 29 96 BIR 1.
FT REPEAT 162 235 BIR 2.
FT REPEAT 255 322 BIR 3.
FT DOMAIN 447 523 CARD.
FT ZN_FING 557 591 RING-TYPE.
FT FT 18 18 N -> Y (IN REF. 4).
FT CONFLICT 119 119 N -> H (IN REF. 2).
FT CONFLICT 153 153 D -> E (IN REF. 2).
FT CONFLICT 163 163 H -> P (IN REF. 2).
FT CONFLICT 165 165 A -> P (IN REF. 2).
FT CONFLICT 191 191 K -> R (IN REF. 2).
FT CONFLICT 364 364 F -> L (IN REF. 2).
FT CONFLICT 552 552 Q -> P (IN REF. 2).
SQ SEQUENCE 604 AA; 68371 MW; 8581A08A9AAB4A7 CRC64;

Query Match 100.0%; Score 267; DB 1; Length 604;
Best Local Similarity 100.0%; Pred. No. 2, 9e-27;
Matches 46; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

OY 1 LAKAGFYIIGDGRVACFCAGCKLSNMWPKDNAMSEHLRHPKCP 46
DB 189 LAKAGFYIIGDGRVACFCAGCKLSNMWPKDNAMSEHLRHPKCP 234

RESULT 2
ID PIAP_PIG STANDARD: PRT; 358 AA.
AC 062640;
DT 15-DEC-1998 (Rel. 37, Created)
DT 15-DEC-1998 (Rel. 37, Last sequence update)
DT 20-AUG-2001 (Rel. 40, Last annotation update)
DE PUTATIVE INHIBITOR OF APOPTOSIS.
GN PIAP.
OS Sus scrofa (Pig).
OC Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
OC Mammalia; Eutheria; Cetartiodactyla; Suina; Suidae; Sus.
OX NCBI_TaxID=9823;
RN [1]
RP SEQUENCE FROM N.A.
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RC TISSUE-Aorta;
RX MEDLINE-98162622; PubMed-9501011;
RA Stenlik C., de Martin R., Binder B.R., Lipp J.;
RT "Cytokine (Iap) family member is regulated by NF-kappa B.";
RL Biochem. Biophys. Res. Commun. 243:827-832(1998).
CC -1- SIMILARITY: BELONGS TO THE IAP FAMILY.
CC -1- SIMILARITY: CONTAINS 2 BIR REPEATS.
CC -1- SIMILARITY: CONTAINS 1 CARD DOMAIN.
CC -1- SIMILARITY: CONTAINS 1 RING-TYPE ZINC FINGER.
CC -----
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CC -----
DR EMBL: U79142; AAC39171.1; -
DR InterPro: IPR001370; BIR.
DR InterPro: IPR001315; CARD.
DR InterPro: IPR001841; ZnF_ring.
DR Pfam: PF00653; BIR; 2.
DR Pfam: PF00619; CARD; 1.
DR Pfam: PF00097; zf-C3HC4; 1.
DR SMART: SM00238; BIR; 3.
DR SMART: SM00114; CARD; 1.
DR SMART: SM00184; RING; 1.
DR PROSITE: PS01282; BIR_REPEAT_1; 2.
DR PROSITE: PS50143; BIR_REPEAT_2; 2.
DR PROSITE: PS50209; CARD; 1.
KW Apoptosis; zinc-finger; Repeat.
FT REPEAT 4 90 BIR 1.
FT REPEAT 90 157 BIR 2.
FT ZN_FING 311 345 RING-TYPE.
SQ SEQUENCE 358 AA; 40977 MW; EB268FA9A6190A4 CRC64;

Query Match 95.1%; Score 254; DB 1; Length 358;
Best Local Similarity 93.5%; Pred. No. 8, 4e-26;
Matches 43; Conservative 2; Mismatches 1; Indels 0; Gaps 0;

OY 1 LAKAGFYIIGDGRVACFCAGCKLSNMWPKDNAMSEHLRHPKCP 46
DB 24 LAKAGFYIIGDGRVACFCAGCKLSNMWPKDNAMSEHLRHPKCP 69

RESULT 3
ID BIR3_HUMAN STANDARD: PRT; 618 AA.
AC Q13490; Q16516;
DT 01-NOV-1997 (Rel. 35, Created)
DT 01-NOV-1997 (Rel. 35, Last sequence update)
DT 20-AUG-2001 (Rel. 40, Last annotation update)
DE BACULOVIRAL IAP REPEAT-CONTAINING PROTEIN 3 (INHIBITOR OF APOPTOSIS
DE PROTEIN 2) (HIAP2) (HIAP-2) (C-IAP1) (TNFR2-TRAF SIGNALING COMPLEX
DE PROTEIN 2) (IAP HOMOLOG B).
GN BIRC3 OR API2 OR IAP2 OR MTHB.
OS Homo sapiens (Human).
OC Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
OC Mammalia; Eutheria; Primates; Catarrhini; Homnidae; Homo.
OX NCBI_TaxID=9606;
RN [1]
RP SEQUENCE FROM N.A.
RX MEDLINE-96128127; PubMed-8548810;
RA Rothe M., Pan M.-G., Henzel W.J., Ayres T.M., Goeddel D.V.;
RT "The TNFR2-TRAF signaling complex contains two novel proteins related
RT to baculoviral inhibitor of apoptosis proteins.";
RL Cell 83:1243-1252(1995).
RN [2]
RP SEQUENCE FROM N.A.
RC TISSUE-Liver;
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RX MEDLINE-96149249; PubMed-8552191.
RA Liston P., Roy N., Tamai K., LeFebvre C., Baird S.G., Chertou-Horvat G.,
RX Farahani R., McLean M., Ikeda J., Meckenzie A., Korneluk R.G.:
RT Suppression of apoptosis in mammalian cells by NAIP and a related
RT family of IAP genes.";
RL Nature 379:349-353(1996).
RN (3)
RP SEQUENCE FROM N.A.
RC TISSUE=Fetal liver;
RX MEDLINE-96209843; PubMed-8643514;
RX Uren A.G., Pakusch M., Hawkins C.J., Puls K.L., Vaux D.L.:
RT Cloning and expression of apoptosis inhibitory protein homologs that
RT function to inhibit apoptosis and/or bind tumor necrosis factor
RT receptor-associated factors".
RL Proc. Natl. Acad. Sci. U.S.A. 93:4974-4978(1996).
RN (4)
RP STRUCTURE BY NMR OF 266-363
RX MEDLINE-99332054; PubMed-10404221;
RX Hinds M.G., Norton R.S., Vaux D.V., Day C.L.:
RT Solution structure of a baculoviral inhibitor of apoptosis (IAP)
RT repeat."
RL Nat. Struct. Biol. 6:648-651(1999).
CC -1- FUNCTION: APOPTOTIC SUPPRESSOR. THE BIR MOTIF REGION INTERACTS
CC WITH THE RECEPTOR ASSOCIATED FACTORS 1 AND 2 (TRAF1 AND TRAF2) TO
CC FORM AN HETEROMERIC COMPLEX, WHICH IS THEN RECRUITED TO THE TUMOR
CC NECROSIS FACTOR RECEPTOR 2 (TNFR2).
CC -1- SUBCELLULAR LOCATION: CYTOPLASMIC (PONENTIAL).
CC -1- TISSUE SPECIFICITY: PRESENT IN MANY FETAL AND ADULT TISSUES,
CC MAINLY EXPRESSED IN ADULT SKELETAL MUSCLE, THYMS, TESTIS, OVARY,
CC AND PANCREAS, LOW OR ABSENT IN BRAIN AND PERIPHERAL BLOOD
CC LEUCOCYTES. BELONGS TO THE IAP FAMILY.
CC -1- SIMILARITY: CONTAINS 3 BIR REPEATS.
CC -1- SIMILARITY: CONTAINS 1 CARD DOMAIN.
CC -1- SIMILARITY: CONTAINS 1 RING-TYPE ZINC FINGER.
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CC -----
DR EMBL: L49431; AAC1942.1; -;
DR EMBL: U45879; AAC0372.1; -;
DR EMBL: U57547; AAC0508.1; -;
DR PDB: 1OBH; 2O-OCT-99.
DR MIM: 601721; -;
DR InterPro: IPR001370; BIR.
DR InterPro: IPR001315; CARD.
DR InterPro: IPR001841; znf_fing.
DR Pfam: PF00653; BIR_3.
DR Pfam: PF00619; CARD_1.
DR Pfam: PR00097; zf-C3HC4_1.
DR SMART: SM00238; BIR_3.
DR SMART: SM00114; CARD_1.
DR SMART: SM00184; RING_1.
DR PROSITE: PS01282; BIR_REPEAT_1; 3.
DR PROSITE: PS50143; BIR_REPEAT_2; 3.
DR PROSITE: PS50209; CARD_1.
KW Apoptosis; Zinc-finger; Repeat; 3D-structure.
FT REPEAT 46 113 BIR 1.
FT REPEAT 184 250 BIR 2.
FT REPEAT 269 336 BIR 3.
FT ZN_FING 453 539 CARD.
FT ZN_FING 571 605 RING-TYPE.
FT CONFLICT 157 157 S->P (IN REF. 2).
FT CONFLICT 308 308 C->G (IN REF. 2).
FT CONFLICT 414 414 Q->L (IN REF. 2).
FT CONFLICT 514 514 L->W (IN REF. 2).
SQ SEQUENCE 618 AA: 69899 MW: C1778D328063586D CRC64;

Query Match	Similarity	92.9%	Score 248	DB 1	Length 618
Best Local	Similarity 91.3%	Pred. No. 8	8e-25		
Matches 42	Conservative 2	Mismatches 2	Indels 0	Gaps 0	

Qy	1	LAAAGFYIGPGDRAVACFCAGCKLSNMPKRNMANSEHLRPFPCPF	46
Db	204	LARGFYIGPGDRAVACFCAGCKLSNMPKRNMANSEHLRPFPCPF	249

RESULT 4	BIR3_MOUSE	STANDARD:	PRT:	612 AA.
AC	BIR3_MOUSE	062210	008864	
DT	01-NOV-1997 (Rel. 35, Created)			
DT	01-NOV-1997 (Rel. 35, Last sequence update)			
DT	20-AUG-2001 (Rel. 40, Last annotation update)			
DE	BACDLOVIRAL IAP REPEAT-CONTAINING PROTEIN 3 (INHIBITOR OF APOPTOSIS			
DE	PROTEIN 2) (MARP2) (MARP-2).			
GN	BIRC3 OR Ap2 OR IAP2.			
OS	Mus musculus (Mouse).			
OC	Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;			
OC	Mammalia; Eutheria; Rodentia; Sciurognathi; Muridae; Murinae; Mus.			
OX	NCBI_TaxID=10090;			
RP	SEQUENCE FROM N.A., AND PARTIAL SEQUENCE.			
RP	MEDLINE=96128127; PubMed=8548810;			
RA	Rothé M., Pan M.-G., Henzel W.J., Ayres T.M., Goeddel D.V.;			
RT	"The TNFR2-TNRF1 signalling complex contains two novel proteins related			
RT	to baculoviral inhibitor of apoptosis proteins.";			
RL	Cell 83:1243-1252(1995).			
RC	[2]			
RP	SEQUENCE FROM N.A.			
RC	TISSUE=Skeletal muscle;			
RA	MEDLINE=98110590; PubMed=9441758;			
RA	Liston P., Lefebvre C., Fong W.G., Xuan J.Y., Korneluk R.G.;			
RT	"Genomic characterization of the mouse inhibitor of apoptosis protein			
RT	1 and 2 genes.";			
RL	Genomics 46:495-503(1997).			
CC	-1- FUNCTION: APOPTOTIC SUPPRESSOR. THE BIR MOTIFS REGION INTERACTS			
CC	WITH TNF RECEPTOR ASSOCIATED FACTORS 1 AND 2 (TNFA1 AND TNFA2) TO			
CC	FORM AN HETEROMERIC COMPLEX, WHICH IS THEN RECRUITED TO THE TUMOR			
CC	NECROSIS FACTOR RECEPTOR 2 (TNFR2).			
CC	-1- TISSUE SPECIFICITY: CYTOPLASMIC (POTENTIAL).			
CC	-1- TISSUE SPECIFICITY: EXPRESSED IN HEART, BRAIN, SPLEEN, LUNG,			
CC	LIVER, SKELETAL MUSCLE, KIDNEY, AND TESTIS.			
CC	-1- SIMILARITY: BELONGS TO THE IAP FAMILY.			
CC	-1- SIMILARITY: CONTAINS 3 BIR REPEATS.			
CC	-1- SIMILARITY: CONTAINS 1 CARD DOMAIN.			
CC	-1- SIMILARITY: CONTAINS 1 RING-TYPE ZINC FINGER.			
CC	-----			
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CC	-----			
DR	EMBL; LA9433; AAC42078.1; -			
DR	EMBL; U88909; AAC53532.1; -			
DR	MED; MG11197009; BIRC3.			
DR	InterPro; IPR001370; BIR.			
DR	InterPro; IPR001315; CARD.			
DR	InterPro; IPR001841; znf_ring.			
DR	Pfam; PF00653; BIR_3.			
DR	Pfam; PF00619; CARD_1.			
DR	Pfam; PF00997; zf-C3HC4_1.			
DR	SMART; SM00238; BIR_3.			
DR	SMART; SM00114; CARD_1.			
DR	SMART; SM00184; RING_1.			
DR	PROSITE; PS01282; BIR_REPEAT_1; 3.			
DR	PROSITE; PS01433; BIR_REPEAT_2; 3.			

DR PROSITE: PS50209; CARD; 1.
 KM Apoptosis; Zinc-finger; Repeat.
 FT REPEAT 46 113 BIR 1.
 FT REPEAT 177 243 BIR 2.
 FT REPEAT 262 329 BIR 3.
 FT DOMAIN 447 533 CARD.
 FT ZN_FING 565 599 RING-TYPE.
 FT ZN_FING 380 380 E -> K (IN REF. 2).
 FT CONFLICT 380 380
 SQ SEQUENCE 612 AA: 69676 MW: E08969D3C6C610D CRC64:

Query Match 92.5%; Score 247; DB 1; Length 612;
 Best Local Similarity 91.3%; Pred. No. 1.2e-24;
 Matches 42; Conservative 2; Mismatches 2; Indels 0; Gaps 0;

OY 1 LAKAGFYIIGPDRVACFACGCKLSNWEKPDAMSEHLRHPKCP 46
 DB 197 LAKAGFYIIGPDRVACFACGCKLSNWEKPDAMSEHLRHPKCP 242

RESULT 5
 BIR2_MOUSE STANDARD: PRT: 600 AA.
 ID BIR2_MOUSE
 AC 008863;
 DT 01-NOV-1997 (Rel. 35, Last sequence update)
 DT 20-NOV-2001 (Rel. 40, Last annotation update)
 DE BACULOVIRAL IAP REPEAT-CONTAINING PROTEIN 2 (INHIBITOR OF APOPTOSIS
 DE PROTEIN 1) (M1AP1) (M1AP-1).
 DE BIRC2 OR API1 OR IAP1.
 OS Mus musculus (Mouse).
 OC Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
 OC Mammalia; Eutheria; Rodentia; Sciurognathi; Muridae; Murinae; Mus.
 OX NCBI_TaxID:10090;
 RN [1]
 RP SEQUENCE FROM N.A.
 RC TISSUE=Skeletal muscle;
 RX MEDLINE=98110590; PubMed=9441758;
 RA Lipton P., Lefebvre C., Fong W.G., Xuan J.Y., Korneluk R.G.;
 RT "Genomic characterization of the mouse inhibitor of apoptosis protein
 RT 1 and 2 genes.";
 RL Genomics 46:495-503(1997).
 CC -1- FUNCTION: APOPTOTIC SUPPRESSOR. THE BIR MOTIFS REGION INTERACTS
 CC WITH TNF RECEPTOR ASSOCIATED FACTORS 1 AND 2 (TRAF1 AND TRAF2) TO
 CC FORM AN HETEROMERIC COMPLEX, WHICH IS THEN RECRUITED TO THE TUMOR
 CC NECROSIS FACTOR RECEPTOR 2 (TNFR2) (BY SIMILARITY).
 CC -1- SUBCELLULAR LOCATION: CYTOPLASMIC (POTENTIAL).
 CC -1- SIMILARITY: BELONGS TO THE IAP FAMILY.
 CC -1- SIMILARITY: CONTAINS 3 BIR REPEATS.
 CC -1- SIMILARITY: CONTAINS 1 CARD DOMAIN.
 CC -1- SIMILARITY: CONTAINS 1 RING-TYPE ZINC FINGER.
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 CC -----
 CC EMBL: 088908; AAC3531.1; -
 DR MGD: MGI:1197007; BIRC2.
 DR InterPro: IPR001370; BIR.
 DR InterPro: IPR001315; CARD.
 DR InterPro: IPR001841; znf_ring.
 DR Pfam: PF00653; BIR; 3.
 DR Pfam: PF00619; CARD; 1.
 DR Pfam: PF00097; zf-C3HC4; 1.
 DR SMART: SM00238; BIR; 3.
 DR SMART: SM00114; CARD; 1.
 DR SMART: SM00184; RING; 1.
 DR PROSITE: PS01282; BIR_REPEAT_1; 3.
 DR PROSITE: PS0143; BIR_REPEAT_2; 3.

DR PROSITE: PS50209; CARD; 1.
 KM Apoptosis; Zinc-finger; Repeat.
 FT REPEAT 27 94 BIR 1.
 FT REPEAT 167 233 BIR 2.
 FT REPEAT 253 320 BIR 3.
 FT DOMAIN 444 512 CARD.
 FT ZN_FING 553 587 RING-TYPE.
 FT ZN_FING 587 587
 SO SEQUENCE 600 AA: 67198 MW: AD7F73E6849317D1 CRC64:

Query Match 88.0%; Score 235; DB 1; Length 600;
 Best Local Similarity 89.18%; Pred. No. 4.2e-23;
 Matches 41; Conservative 1; Mismatches 4; Indels 0; Gaps 0;

OY 1 LAKAGFYIIGPDRVACFACGCKLSNWEKPDAMSEHLRHPKCP 46
 DB 187 LAKAGFYIIGPDRVACFACGCKLSNWEKPDAMSEHLRHPKCP 232

RESULT 6
 BIR_CHICK STANDARD: PRT: 611 AA.
 ID BIR_CHICK
 AC 090660;
 DT 01-NOV-1997 (Rel. 35, Last sequence update)
 DT 01-NOV-1997 (Rel. 35, Last sequence update)
 DT 20-NOV-2001 (Rel. 40, Last annotation update)
 DE INHIBITOR OF APOPTOSIS PROTEIN (IAP) (INHIBITOR OF T CELL APOPTOSIS
 DE PROTEIN).
 DE ITA.
 OS Gallus gallus (Chicken).
 OC Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
 OC Archosauria; Aves; Neognathae; Galliformes; Phasianidae; Phasianinae;
 OC Gallus.
 OX NCBI_TaxID:9031;
 RN [1]
 RP SEQUENCE FROM N.A.
 RC TISSUE=spleen;
 RX MEDLINE=97101112; PubMed=8945639;
 RA Dlugy M.R., Kimpton W.G., York J.J., Connick T.E., Lowenthal J.W.;
 RT "Itv, a vertebrate homologue of IAP that is expressed in T
 RT lymphocytes.";
 RL DNA Cell Biol. 15:981-988(1996).
 CC -1- FUNCTION: APOPTOTIC SUPPRESSOR (BY SIMILARITY).
 CC -1- SUBCELLULAR LOCATION: PREDOMINANTLY NUCLEAR.
 CC -1- TISSUE SPECIFICITY: CELLS OF THE T LYMPHOCYTE LINEAGE. FOUND IN
 CC BOTH CORTICAL AND MEDULLARY CELLS OF THE THYMUS.
 CC -1- DEVELOPMENTAL STAGE: HIGH LEVELS ARE INDUCED WITHIN 4-8 HOURS OF
 CC T-CELL ACTIVATION IN SPLEEN AND THYMUS.
 CC -1- SIMILARITY: BELONGS TO THE IAP FAMILY.
 CC -1- SIMILARITY: CONTAINS 3 BIR REPEATS.
 CC -1- SIMILARITY: CONTAINS 1 CARD DOMAIN.
 CC -1- SIMILARITY: CONTAINS 1 RING-TYPE ZINC FINGER.
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 CC -----
 CC EMBL: 027466; AAB48118.1; -
 DR InterPro: IPR001370; BIR.
 DR InterPro: IPR001315; CARD.
 DR InterPro: IPR001841; znf_ring.
 DR Pfam: PF00653; BIR; 3.
 DR Pfam: PF00619; CARD; 1.
 DR Pfam: PF00097; zf-C3HC4; 1.
 DR SMART: SM00238; BIR; 3.
 DR SMART: SM00114; CARD; 1.
 DR SMART: SM00184; RING; 1.
 DR PROSITE: PS01282; BIR_REPEAT_1; 3.
 DR PROSITE: PS0143; BIR_REPEAT_2; 3.

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DR PROSITE: PS50209; CARD: 1.
KW Apoptosis; Zinc-finger. Repeat; Nuclear protein.
FT REPEAT 30 BIR 1.
FT REPEAT 176 242 BIR 2.
FT REPEAT 262 329 BIR 3.
FT REPEAT 564 598 RING-TYPE.
SQ SEQUENCE 611 AA; 69009 MW; 53FC9136F34EBDD CRC64;

Query Match 69.7%; Score 186; DB 1; Length 611;
Best Local Similarity 71.7%; Pred. No. 1e-16;
Matches 33; Conservative 3; Mismatches 10; Indels 0; Gaps 0;

OY 1 LAKAGFYIYIGPDYACFACGKLSMWERPDNAMESHLRHPKCP 46
Db 196 VAKAGIDLDLGTADKRVACVCGVXLSMWERPDNAMESHLRHPKCP 241

RESULT 7
BIR4_HUMAN STANDARD; PRT: 497 AA.
AC P98170; OSNO14;
DT 01-OCT-1996 (Rel. 34, Created)
DT 01-OCT-1996 (Rel. 34, Last sequence update)
DT 20-AUG-2001 (Rel. 40, Last annotation update)
DE BACULOVIRAL IAP REPEAT-CONTAINING PROTEIN 4 (INHIBITOR OF APOPTOSIS
DE PROTEIN 3) (X-LINKED INHIBITOR OF APOPTOSIS PROTEIN) (X-LINKED IAP)
DE (IAP-LIKE PROTEIN) (HILP).
GN BIR4 OR API3 OR IAP3 OR XIAP.
OS Homo sapiens (Human).
OC Mammalia; Eutheria; Chordata; Craniata; Vertebrata; Euteleostomi;
OC Eukaryota; Metazoa; Chordata; Cephalochordata; Vertebrata; Mollusca;
OC NCB1_TaxID=9606;
RN [1]
RP SEQUENCE FROM N.A.
RC TISSUE=retal brain;
RX MEDLINE=96149249; PubMed=8552191;
RA Liston P., Roy N., Tamai K., Lefebvre C., Balid S., Chertlon-Horvat G.,
RA Farahani R., McLean M., Ikeda J., Mackenzie A., Korneluk R.G.;
RT *Suppression of apoptosis in mammalian cells by NAIP and a related
RT family of IAP genes.*;
RL Nature 379:349-353(1996).
RN [2]
RP SEQUENCE FROM N.A.
RC TISSUE=retal heart;
RX MEDLINE=96256286; PubMed=8654366;
RA Duckett C.S., Nava V.E., Gedrich R.W., Clem R.J., van Dongen J.L.,
RA Gilliland M.C., Shiels H., Hardwick J.M., Thompson C.B.;
RT *A conserved family of cellular genes related to the baculovirus IAP
RT gene and encoding apoptosis inhibitors.*;
RL EMBO J. 15:2685-2694(1996).
RN [3]
RP SEQUENCE FROM N.A.
RA Grafham D.;
RL Submitted (APR-2000) to the EMBL/Genbank/DBJ databases.
RN [4]
RP FUNCTION.
RX MEDLINE=97373959; PubMed=9230442;
RA Deveraux Q.L., Takamashi R., Salvesen G.S., Reed J.C.;
RT *X-linked IAP is a direct inhibitor of cell-death proteases.*;
RL Nature 388:300-304(1997).
RN [5]
RP FUNCTION: APOPTOTIC SUPPRESSOR. INHIBITOR OF CASPASE-3 AND
RN CASPASE-7.
RN [6]
RP SUBCELLULAR LOCATION: CYTOPLASMIC.
RN [7]
RP TISSUE SPECIFICITY: UBIQUITOUS. EXCEPT PERIPHERAL BLOOD
RN LEUKOCYTES.
RN [8]
RP SIMILARITY: BELONGS TO THE IAP FAMILY.
RN [9]
RP SIMILARITY: CONTAINS 3 BIR REPEATS.
RN [10]
RP SIMILARITY: CONTAINS 1 RING-TYPE ZINC FINGER.
RN [11]
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CC or send an email to license@sib.ch).
CC -----
DR EMBL: U45880; AAC50373.1; -
DR EMBL: U32974; AAC50518.1; -
DR EMBL: A121601; CAB95312.1; -
DR MIM: 300079; -
DR InterPro: IPR001370; BIR
DR InterPro: IPR001841; ZnF_ring.
DR Pfam: PF00653; BIR_3.
DR Pfam: PF00097; zf-C3HC4; 1.
DR SMART: SM00238; BIR_3.
DR SMART: SM00184; RING; 1.
DR PROSITE: PS01282; BIR_REPEAT_1; 3.
DR PROSITE: PS01282; BIR_REPEAT_2; 3.
DR PROSITE: PS01282; BIR_REPEAT_3; 3.
DR Apoptosis; Zinc-finger. Repeat; Thiol protease inhibitor.
KW Apoptosis; Zinc-finger. Repeat; Thiol protease inhibitor.
FT REPEAT 26 97 BIR 1.
FT REPEAT 163 230 BIR 2.
FT REPEAT 265 330 BIR 3.
FT REPEAT 450 484 RING-TYPE.
FT ZN_FING 162 162 S -> C (IN REF. 1).
FT CONFLICT 423 423 Q -> P (IN REF. 2).
FT CONFLICT 423 423
SQ SEQUENCE 497 AA; 56684 MW; 90394C16D45EB35 CRC64;

Query Match 68.2%; Score 182; DB 1; Length 497;
Best Local Similarity 69.6%; Pred. No. 2.8e-16;
Matches 32; Conservative 6; Mismatches 13; Indels 0; Gaps 0;

OY 1 LAKAGFYIYIGPDYACFACGKLSMWERPDNAMESHLRHPKCP 46
Db 184 LAKAGFYIYIGPDYACFACGKLSMWERPDNAMESHLRHPKCP 229

RESULT 8
BIR4_MOUSE STANDARD; PRT: 496 AA.
ID BIR4_MOUSE
AC 060989; OS08865;
DT 01-NOV-1997 (Rel. 35, Created)
DT 01-NOV-1997 (Rel. 35, Last sequence update)
DT 20-AUG-2001 (Rel. 40, Last annotation update)
DE BACULOVIRAL IAP REPEAT-CONTAINING PROTEIN 4 (INHIBITOR OF APOPTOSIS
DE PROTEIN 3) (X-LINKED INHIBITOR OF APOPTOSIS PROTEIN) (X-LINKED IAP)
DE (IAP HOMOLOG A) (MIAP3) (MIAP-3).
GN BIR4 OR API3 OR XIAP OR ALPA OR MIHA.
OS Mus musculus (Mouse).
OC Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
OC Mammalia; Eutheria; Rodentia; Sciurognathi; Muridae; Mus.
OX NCB1_TaxID=10090;
RN [1]
RP SEQUENCE FROM N.A.
RC STRAIN=C57BL/6 X CBA; TISSUE=Liver;
RX MEDLINE=96209843; PubMed=8643514;
RA Uren A.G., Pakusch M., Hawkins C.J., Puls K.L., Vaux D.L.;
RT *Cloning and expression of apoptosis inhibitory protein homologs that
RT function to inhibit apoptosis and/or bind tumor necrosis factor
RT receptor-associated factors.*;
RL Proc. Natl. Acad. Sci. U.S.A. 93:4974-4978(1996).
RN [2]
RP SEQUENCE FROM N.A.
RA Farahani R., Lefebvre C., Korneluk R.G., Mackenzie A.E.;
RL Submitted (JUN-1997) to the EMBL/Genbank/DBJ databases.
RN [3]
RP FUNCTION: APOPTOTIC SUPPRESSOR. INHIBITOR OF CASPASE-3 AND
RN CASPASE-7 (BY SIMILARITY).
RN [4]
RP SUBCELLULAR LOCATION: CYTOPLASMIC (BY SIMILARITY).
RN [5]
RP SIMILARITY: BELONGS TO THE IAP FAMILY.
RN [6]
RP SIMILARITY: CONTAINS 3 BIR REPEATS.
RN [7]
RP SIMILARITY: CONTAINS 1 RING-TYPE ZINC FINGER.
RN [8]
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DR EMBL: U36843; AAC52594.1; -
 DR EMBL: U88990; AAB58376.1; -
 DR MGI: 107572; Birc4
 DR InterPro: IPR001370; BIR.
 DR InterPro: IPR001841; Znf_Ling.
 DR Pfam: PF00653; BIR.3.
 DR Pfam: PF00097; Zf-C3HC4; 1.
 DR SMART: SM00238; BIR.3.
 DR SMART: SM00184; RING.1.
 DR PROSITE: PS01282; BIR_REPEAT_1; 3.
 DR PROSITE: PS0143; BIR_REPEAT_2; 3.
 KW Apoptosis; zinc-finger; Repeat.
 FT REPEAT 26 93 BIR 1.
 FT REPEAT 163 230 BIR 2.
 FT REPEAT 264 329 BIR 3.
 FT ZN_FING 449 483 RING-TYPE.
 FT CONFLICT 208 208 E->K (IN REF. 2).
 FT CONFLICT 317 317 E->D (IN REF. 2).
 FT CONFLICT 322 322 W->C (IN REF. 2).
 FT CONFLICT 346 346 S->P (IN REF. 2).
 FT CONFLICT 360 360 S->P (IN REF. 2).
 FT CONFLICT 360 360 S->L (IN REF. 2).
 FT CONFLICT 388 388 I->L (IN REF. 2).
 FT CONFLICT 449 449 C->S (IN REF. 2).
 FT CONFLICT 462 462 V->F (IN REF. 2).
 FT CONFLICT 468 468 V->A (IN REF. 2).
 FT CONFLICT 490 490 K->N (IN REF. 2).
 SQ SEQUENCE 496 AA; 56079 MW; ECSPAE0799F2CDD8 CRC64;

Query Match 66.3%; Score 177; DB 1; Length 496;
 Best Local Similarity 67.4%; Pred. No. 1.3e-15;
 Matches 31; Conservative 1; Mismatches 14; Indels 0; Gaps 0;

OY 1 LAKAGFYIGPDRAVACFACGKLSNWEPRKDNAMSEHLRHPKCP 46
 184 LASAGLYTGTADDOVOCFCGCKLENNWPCDRAWSHRHPPNCF 229

RESULT 9
 ID BIR4_RAT STANDARD; PRT; 496 AA.
 AC 09R016;
 DT 20-AUG-2001 (Rel. 40; Last sequence update)
 DT 20-AUG-2001 (Rel. 40; Last sequence update)
 DE BACULOVIRAL IAP REPEAT-CONTAINING PROTEIN 4 (INHIBITOR OF APOPTOSIS
 DE PROTEIN 3) (X-LINKED INHIBITOR OF APOPTOSIS PROTEIN) (X-LINKED IAP)
 DE (IAP HOMOLOG A) (RIAP3) (RIAP-3).
 OS Rattus norvegicus (Rat).
 GN Birc4 OR API3 OR XIAP.
 CC Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
 CC Mammalia; Eutheria; Rodentia; Sciurognathi; Muridae; Murinae; Rattus.
 OX NCBI_TaxId=10116;
 RN [1]
 RP SEQUENCE FROM N.A.
 RA Saito N.;
 RT "Rattus norvegicus X-linked inhibitor of apoptosis (riap3) mRNA."
 RT Submitted (OCT-1999) to the EMBL/GenBank/DBJ databases.
 RL -1- FUNCTION: APOPTOTIC SUPPRESSOR. INHIBITOR OF CASPASE-3 AND
 CC CASPASE-7 (BY SIMILARITY).
 CC -1- SUBCELLULAR LOCATION: CYTOSOL (BY SIMILARITY).
 CC -1- SIMILARITY: BELONGS TO THE IAP FAMILY.
 CC -1- SIMILARITY: CONTAINS 3 BIR REPEATS.
 CC -1- SIMILARITY: CONTAINS 1 RING-TYPE ZINC FINGER.
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DR EMBL: AB033366; BAA85304.1; -
 DR InterPro: IPR001370; BIR.
 DR InterPro: IPR001841; Znf_Ling.
 DR Pfam: PF00653; BIR.3.
 DR Pfam: PF00097; Zf-C3HC4; 1.
 DR SMART: SM00238; BIR.3.
 DR SMART: SM00184; RING.1.
 DR PROSITE: PS01282; BIR_REPEAT_1; 3.
 DR PROSITE: PS0143; BIR_REPEAT_2; 3.
 KW Apoptosis; zinc-finger; Repeat.
 FT REPEAT 26 93 BIR 1.
 FT REPEAT 163 230 BIR 2.
 FT REPEAT 264 329 BIR 3.
 FT ZN_FING 449 483 RING-TYPE.
 SQ SEQUENCE 496 AA; 56072 MW; E250E3C77461A469 CRC64;

Query Match 65.5%; Score 175; DB 1; Length 496;
 Best Local Similarity 67.4%; Pred. No. 2.3e-15;
 Matches 31; Conservative 1; Mismatches 14; Indels 0; Gaps 0;

OY 1 LAKAGFYIGPDRAVACFACGKLSNWEPRKDNAMSEHLRHPKCP 46
 184 LASAGLYTGTADDOVOCFCGCKLENNWPCDRAWSHRHPPNCF 229

RESULT 10
 ID IAP2_DROME STANDARD; PRT; 498 AA.
 AC 024307; Q24117; Q24115; Q24149; Q3V7G1;
 DT 01-NOV-1997 (Rel. 35; Created)
 DT 01-NOV-1997 (Rel. 35; Last sequence update)
 DT 20-AUG-2001 (Rel. 40; Last sequence update)
 DE APOPTOSIS 2 INHIBITOR (INHIBITOR OF APOPTOSIS 2) (DIAP2) (DIAP) (IAP
 DE HOMOLOG A) (IAP-LIKE PROTEIN) (DILP).
 GN IAP2 OR ILP OR DIHA OR CG8293.
 OS Drosophila melanogaster (Fruit fly).
 CC Eukaryota; Metazoa; Arthropoda; Tracheata; Hexapoda; Insecta;
 CC Ephydroidea; Diptera; Endopterygota; Diptera; Brachycera; Muscomorpha;
 CC NCBI_TaxId=7227;
 RN [1]
 RP SEQUENCE FROM N.A.
 RA Tissue-Eye Imaginal disk;
 RC MEDLINE-96128128; PubMed-8548811;
 RA Hay B.A., Wattam D.A., Rubin G.M.;
 RT "Drosophila homologs of baculovirus inhibitor of apoptosis proteins
 RT function to block cell death."
 RL Cell 83:1253-1262(1995).
 RN [2]
 RP SEQUENCE FROM N.A.
 RA Tissue-Eye;
 RC MEDLINE-96149249; PubMed-8552191;
 RA Liston P., Roy N., Tamai K., Lefebvre C., Baird S., Cherton-Horvat G.,
 RA Farhadi R., McLean M., Ikeda J., Mackenzie A., Korneluk R.G.;
 RT "Suppression of apoptosis in mammalian cells by Naip and a related
 RT family of IAP genes."
 RL Nature 379:349-353(1996).
 RN [3]
 RP SEQUENCE FROM N.A.
 RA STRAIN-CANTON-S;
 RC MEDLINE-96256286; PubMed-8654366;
 RA Duckett C.S., Nava V.E., Gedrich R.W., Clem R.J., van Dongen J.L.,
 RA Gillilan M.C., Shelds H., Hardwick J.M., Thompson C.B.;
 RA "A conserved family of cellular genes related to the baculovirus IAP
 RT gene and encoding apoptosis inhibitors."
 RL EMBO J. 15:2685-2694(1996).

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RN [4]
RP SEQUENCE FROM N.A.
RC STRAIN-CANTON-S;
RA Ross J.L.;
RU Thesis (1991), Vanderbilt University / Nashville, U.S.A.
RN [3]
RP SEQUENCE FROM N.A.
RC STRAIN-BERKELEY;
RA MEDLINE-20196006; PubMed-10731132;
RA Adams M.D., Celniker S.E., Holt R.A., Evans C.A., Gocayne J.D.,
RA Amanatides P.G., Scherer S.E., Li P.W., Hoskins R.A., Galle R.F.,
RA Sutton G.G., Mortman J.R., Richards S., Ashburner M., Henderson S.N.,
RA Brandon R.C., Rogers Y.H.C., Blazer J.R.G., Champe M., Pfeiffer B.D.,
RA Wan K.H., Doyle C., Baxter E.G., Helt G., Nelson C.R., Mikos G.L.G.,
RA Bailly R.M., Basu A., Baxendale J., Bayraktaroglu L., Beasley E.M.,
RA Beeson K.Y., Benos P.V., Bertan B.P., Bhandari D., Bolshakov S.,
RA Borkova D., Botchan M.R., Bouck J., Brokstein P., Brothier P.,
RA Burtis K.C., Busan D.A., Butler H., Cadieu E., Center A., Chandra I.,
RA Cherry J.M., Cawley S., Dahlke C., Davenport L.B., Davies P.,
RA de Pablos B., Delcher A., Deng Z., Mays A.D., Dew I., Dietz S.M.,
RA Dodson K., Doup L.E., Downes M., Dugan-Rocha S., Dunkov B.C., Dunn P.,
RA Durbin K.J., Evangelista C.C., Ferraz C., Ferreira S., Fleischmann W.,
RA Foaier C., Gabrielian A.E., Garg N.S., Gelbart W.M., Glasser K.,
RA Glodet A., Gong F., Gorrell J.H., Gu Z., Guan P., Harris M.,
RA Harris N.L., Harvey D., Heiman T.J., Hernandez J.R., Houck J.,
RA Hostin D., Houston K.A., Howland T.J., Wei M.-H., Ibegwam C.,
RA Jaitai M., Kalush F., Karpen G.H., Ke Z., Kennison J.A., Ketchum K.A.,
RA Kimmel B.E., Kodira C.D., Kraft C., Kravitz S., Kulp D., Lai Z.,
RA Lasko P., Lai Y., Levitsky A.A., Li J., Li Z., Liang Y., Lin X.,
RA Liu X., Mattei B., McIntosh T.C., McLeod M.P., McPherson D.,
RA Mekulov G., Mitsuhashi N.V., Mobarry C., Morris J., Moshrefi A.,
RA Mount S.M., Moy M., Murphy B., Murphy L., Muzny D.M., Nelson D.L.,
RA Nelson D.R., Nelson K.A., Nixon K., Nusskern D.R., Paclel J.M.,
RA Palazzolo M., Peltman G.S., Pan S., Pollard J., Puri V., Reese M.G.,
RA Reinert K., Remington K., Saunders R.D.C., Scheeler F., Shen H.,
RA Shue B.C., Siden-Kiamos I., Simpson M., Skupski M.P., Smith T.,
RA Spier E., Spradling A.C., Stapleton M., Strong R., Sun E.,
RA Svrtka R., Tector C., Turner R., Venter E., Wang A.H., Wang X.,
RA Wang Z.-Y., Wassarman D.A., Weinstein G.M., Weissbach J.,
RA Williams S.M., Woodage T., Worley K.C., Wu D., Yang S., Yao Q.A.,
RA Ye J., Yen K.-F., Zaveri J.S., Zhan M., Zhang G., Zhao Q., Zheng L.,
RA Zheng X.H., Zhong F.N., Zhong W., Zhou X., Zhu S., Zhu X., Smith H.O.,
RA Gibbs R.A., Myers E.W., Rubin G.M., Venter J.C.;
RT "The genome sequence of Drosophila melanogaster."
RL Science 287:2185-2195(2000).
RN [6]
RP SEQUENCE OF 17-498 FROM N.A.
RC TISSUE-Larva;
RA MEDLINE-96209843; PubMed-8643514;
RA Uren A.G., Pakusch M., Hawkins C.J., Puls K.L., Vaux D.L.;
RT "Cloning and expression of apoptosis inhibitory protein homologs that
RT function to inhibit apoptosis and/or bind tumor necrosis factor
RT receptor-associated factors."
RL Proc. Natl. Acad. Sci. U.S.A. 93:4974-4978(1996).
CC -1- FUNCTION: APOPTOTIC SUPPRESSOR. OVEREXPRESSION SUPPRESSES RPR AND
CC HD-DEPENDENT CELL DEATH IN THE EYE.
CC -1- DEVELOPMENTAL STAGE: EXPRESSED AT HIGH LEVELS THROUGHOUT
CC DEVELOPMENT.
CC -1- SIMILARITY: BELONGS TO THE IAP FAMILY.
CC -1- SIMILARITY: CONTAINS 3 BIR REPEATS.
CC -1- SIMILARITY: CONTAINS 1 RING-TYPE ZINC FINGER.
CC -----
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CC -----
CC EMBL: L49441; AAC41610.1; -

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DR EMBL: U45881; AAC46988.1; -
DR EMBL: U32373; AAC47155.1; -
DR EMBL: M96581; -; NOT ANNOTATED_CDS.
DR EMBL: AE003808; AAF58095.1; -
DR EMBL: U38809; AAB08398.1; -
DR Flybase: Fgn0015247; Iap2.
DR InterPro: IPR001547; Iap2.
DR InterPro: IPR001570; BIR.
DR InterPro: IPR001841; Znf_fing.
DR Pfam: PF00653; BIR; 3.
DR Pfam: PF00097; zf-C3HC4; 1.
DR SMART: SM00238; BIR; 3.
DR SMART: SM00184; BIR; 1.
DR PROSITE: PS01282; BIR_REPEAT_1; 3.
DR PROSITE: PS01043; BIR_REPEAT_2; 3.
DR Apoptosis; Zinc-finger; Repeat.
KM REPEAT 9
FT REPEAT 113 179 BIR 1.
FT REPEAT 212 279 BIR 3.
FT ZN_FING 451 485 RING-TYPE.
FT CONFLICT 5 5 G->V (IN REF. 2).
FT CONFLICT 40 40 N->K (IN REF. 2).
FT CONFLICT 64 65 ER->AG (IN REF. 3).
FT CONFLICT 94 94 A->D (IN REF. 1).
FT CONFLICT 282 282 A->S (IN REF. 6).
FT CONFLICT 286 286 P->Q (IN REF. 3).
FT CONFLICT 302 302 P->T (IN REF. 2 AND 5).
FT CONFLICT 303 303 A->T (IN REF. 2).
FT CONFLICT 327 327 A->T (IN REF. 2).
FT CONFLICT 369 376 ALEVRREP->DMRCASR (IN REF. 3).
SO SEQUENCE 498 AA; 54506 MW; 66EC36DA6ED24AD6 CRC64;

Query Match 54.3%; Score 145; DB 1; Length 498;
Best Local Similarity 55.6%; Pred. No. 1.9e-11;
Matches 23; Conservative 4; Mismatches 16; Indels 0; Gaps 0;

QY 1 LAKAGFYIIGPDRAVACFAGGKLSNMEPKDNAMSEHLRHPKCP 45
Db 133 LAKAGFYILNRDLHVCVACVNCVIAKWEKNDNAFEHHRFPPOCP 177
|||||: | | | | | | | | | | | | | | | | | | | |
AC Q9JIB3; STANDARD; PRT: 1402 AA.
DT 20-AUG-2001 (Rel. 40; Created)
DT 20-AUG-2001 (Rel. 40; Last sequence update)
DE BACULOVIRAL IAP REPEAT-CONTAINING PROTEIN 1G (NEURONAL APOPTOSIS
DE INHIBITORY PROTEIN 7).
GN BIRCG OR NAIP7.
OS Mus musculus (Mouse).
OC Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
OC Mammalia; Eutheria; Rodentia; Sciurognathi; Muridae; Murinae; Mus.
OX NCBI_TaxID=10090;
RN [1]
RP SEQUENCE FROM N.A.
RA MEDLINE-20414747; PubMed-10958627;
RA Endrizzi M.G., Hadjilov V., Growney J.D., Miller W., Dietrich W.F.;
RT "Genomic sequence analysis of the mouse Naip gene array."
RL Genome Res. 10:1095-1102(2000).
CC -1- FUNCTION: PREVENTS MOTOR-NEURON APOPTOSIS INDUCED BY A VARIETY OF
CC SIGNALS.
CC -1- SIMILARITY: CONTAINS 3 BIR REPEATS.
CC -----
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CC or send an email to license@isb-sib.ch).
CC -----
CC EMBL: L49441; AAC41610.1; -

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DR EMBL: AF242433; AAF82749.1; -
DR MGD: MGI:1658256; Birc1g.
DR InterPro: IPR001370; BIR.
DR Pfam: PF00653; BIR_3.
DR SMART: SM00238; BIR_3.
DR PROSITE: PS01282; BIR_REPEAT_1; 2.
DR PROSITE: PS0143; BIR_REPEAT_2; 3.
DR Apoptosis; Repeat; Multigene family.
FT REPEAT 60 127 BIR 1.
FT REPEAT 159 227 BIR 2.
FT REPEAT 278 345 BIR 3.
SO SEQUENCE 1402 AA; 159662 MW; C1DFPBA359893E0D CRC64;

Query Match 52.8%; Score 141; DB 1; Length 1402;
Best Local Similarity 52.2%; Pred. No. 1.8e-10;
Matches 24; Conservative 5; Mismatches 17; Indels 0; Gaps 0;

QY 1 LAKAGFYIIGPDVACGKLSNWEKDNAMSEHLRHPKCP 46
Db 181 LSAAGFVETGKRDYOCFSCGSLGNWEGDDPWKEHAKFPKCE 226

RESULT 12
BIR1_HUMAN STANDARD; PRT; 1403 AA.
AC Q13075; Q13730; Q99796; O75857;
DT 01-NOV-1997 (Rel. 35; Created)
DT 20-AUG-2001 (Rel. 40; Last sequence update)
DE 20-AUG-2001 (Rel. 40; Last annotation update)
DE BACULOVIRAL IAP REPEAT-CONTAINING PROTEIN 1 (NEURONAL APOPTOSIS
DE INHIBITORY PROTEIN).
OS Homo sapiens (human).
CC Eukaryota; Metazoa; Chordata; Vertebrata; Euteleostomi;
CC Mammalia; Eutheria; Primates; Catarrhini; Homiidae; Homo.
OX NCBI_TaxID=9606;
RN 11
RP SEQUENCE FROM N.A.
RC TISSUE=Fetal brain; PubMed=7913013;
RA Roy N., Mahadevan M.S., McLean M., Shuler G., Yareghli Z.,
RA Farahani R., Baird S., Besner-Johnston A., Lefebvre C., Kang X.,
RA Seilh M., Aubry H., Tamai K., Guan X., Ioannou P., Crawford T.O.,
RA de Jong P.J., Surh L., Ikeda J., Korneluk R.G., Mackenzie A.;
RT "The gene for neuronal apoptosis inhibitory protein is partially
RT deleted in individuals with spinal muscular atrophy.";
RL Cell 80:167-178(1995).
RN 121
RP SEQUENCE FROM N.A., AND REVISIONS.
RC TISSUE=Brain; PubMed=9503025;
RA Chen Q., Baird S.D., Mahadevan M., Besner-Johnston A., Farahani R.,
RA Xuan J.-Y., Kang X., Lefebvre C., Ikeda J.-E., Korneluk R.G.,
RA Mackenzie A.E.;
RT "Sequence of a 131-kb region of 5q13.1 containing the spinal muscular
RT atrophy candidate genes SMN and NAIP.";
RL Genomics 48:121-127(1998).
RN 131
RP SEQUENCE OF 386-623 FROM N.A.
RA der Steege G., Draalijers T.G., Grootscholten P.M., Olinga J.,
RA Anzeveno R., Velona I., Brahe C., Scheffer H., van Ommen G.J.B.,
RA Buys C.H.C.M.;
RL Submitted (MAY-1995) to the EMBL/GenBank/DBJ databases.
RN 141
RP SEQUENCE OF 222-1403 FROM N.A.
RA Jones K., Graves T., McPherson J.;
RL Submitted (JUN-1998) to the EMBL/GenBank/DBJ databases.
RN 151
RP FUNCTION.
RC TISSUE=Liver; PubMed=8552191;
RA MEDLINE=9619249; PubMed=8552191;
RA Liston P., Roy N., Tamai K., Lefebvre C., Baird S., Cherton-Horvat G.,

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RA Farahani R., McLean M., Ikeda J., Mackenzie A., Korneluk R.G.;
RT "Suppression of apoptosis in mammalian cells by NAIP and a related
RT family of IAP genes";
RL Nature 379:349-353(1996).
CC -1- FUNCTION: PREVENTS MOTOR-NEURON APOPTOSIS INDUCED BY A VARIETY OF
CC SIGNALS.
CC -1- TISSUE SPECIFICITY: EXPRESSED IN MOTOR NEURONS, BUT NOT IN SENSORY
CC NEURONS. FOUND IN LIVER AND PLACENTA, AND IN A LESSER EXTENT IN
CC SPINAL CORD.
CC -1- DISEASE: MUTATED OR DELETED FORMS OF NAIP HAVE BEEN FOUND IN
CC INDIVIDUALS WITH SPINAL MUSCULAR ATROPHY TYPE I (SMA TYPE 1). SMAS
CC ARE FATAL AUTOSOMAL RECESSIVE DISORDERS SUBCLASSIFIED AS TYPE I
CC (BERNIG-HOFFMANN DISEASE), TYPE II (INTERMEDIATE FORM), AND TYPE
CC III (WOLFFHART-RUGELBERG-WELANDER DISEASE) BASED UPON THE AGE OF
CC ONSET AND CLINICAL SEVERITY. THESE NEURODEGENERATIVE DISORDERS ARE
CC CHARACTERIZED BY DEGENERATION OF LOWER MOTOR NEURONS, LEADING TO
CC PROGRESSIVE PARALYSIS MUSCULAR ATROPHY. CONCERNS 1 IN 6000
CC MEMBORN.
CC -1- SIMILARITY: CONTAINS 3 BIR REPEATS.
CC -----
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CC or send an email to license@isb-sib.ch).
CC -----
CC EMBL: U09251; AAC52045.1; -
CC EMBL: U80017; AAC52047.1; -
CC EMBL: U21913; AAA64504.1; -
CC EMBL: AC005031; AAC62261.1; -
CC MIM: 600355; -
CC InterPro: IPR001370; BIR.
CC Pfam: PF00653; BIR_3.
CC SMART: SM00238; BIR_REPEAT_1; 3.
CC PROSITE: PS01282; BIR_REPEAT_1; 3.
CC PROSITE: PS0143; BIR_REPEAT_2; 3.
CC Apoptosis; Repeat.
FT REPEAT 60 127 BIR 1.
FT REPEAT 159 227 BIR 2.
FT REPEAT 278 345 BIR 3.
FT CONFLICT 222 223 PK -> YR (IN REF. 4).
FT CONFLICT 386 387 VP -> ST (IN REF. 3).
FT CONFLICT 535 535 M -> V (IN REF. 3).
FT CONFLICT 553 553 Y -> H (IN REF. 3).
FT CONFLICT 1228 1231 MISSING (IN REF. 4).
SO SEQUENCE 1403 AA; 159613 MW; 566304C154DA564 CRC64;

Query Match 52.8%; Score 141; DB 1; Length 1403;
Best Local Similarity 52.2%; Pred. No. 1.8e-10;
Matches 24; Conservative 6; Mismatches 16; Indels 0; Gaps 0;

QY 1 LAKAGFYIIGPDVACGKLSNWEKDNAMSEHLRHPKCP 46
Db 299 LAKAGFVETGKRDYOCFSCGSLGNWEGDDPWKEHAKFPKCE 344

RESULT 13
BIR1_MOUSE STANDARD; PRT; 1403 AA.
AC Q90WK5; Q9R017; Q9JIB5;
DT 20-AUG-2001 (Rel. 40; Created)
DT 20-AUG-2001 (Rel. 40; Last sequence update)
DT 20-AUG-2001 (Rel. 40; Last annotation update)
DE BACULOVIRAL IAP REPEAT-CONTAINING PROTEIN 1A (NEURONAL APOPTOSIS
DE INHIBITORY PROTEIN 1).
OS Mus musculus (mouse).
CC Eukaryota; Metazoa; Chordata; Vertebrata; Euteleostomi;
CC Mammalia; Eutheria; Rodentia; Sciurognathi; Muridae; Murinae; Mus.
OX NCBI_TaxID=10090;

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RN [1]
RP SEQUENCE FROM N.A.
RA Yaraqhi Z., Korneluk R.G., Mackenzie A.E.;
RT "Cloning and characterization of the multiple copies of the murine
RL homologue of Naip (neuronal apoptosis inhibitory protein).";
RM Submitted (JUN-1997) to the EMBL/GenBank/DBJ databases.
RN [2]
RP SEQUENCE FROM N.A.
RX MEDLINE-99431676; PubMed-10501978;
RA Huang S., Scharf J.M., Growney J.D., Endrizzi M.G., Dietrich W.F.;
RT "The mouse Naip gene cluster on Chromosome 13 encodes several distinct
RL functional transcripts.";
RM Mamm. Genome 10:1032-1035(1999).
RN [3]
RP SEQUENCE FROM N.A.
RX MEDLINE-20414747; PubMed-10958627;
RA Endrizzi M.G., Hadinoto V., Growney J.D., Miller W., Dietrich W.F.;
RT "Genomic sequence analysis of the mouse Naip gene array.";
RL Genome Res. 10:1095-1102(2000).
CC -1- FUNCTION: PREVENTS MOTOR-NEURON APOPTOSIS INDUCED BY A VARIETY OF
CC SIGNALS.
CC -1- SIMILARITY: CONTAINS 3 BIR REPEATS.
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CC -----
DR EMBL: AF007769; AAB69223.1; -
DR EMBL: AF135491; AAD56763.1; -
DR EMBL: AF242432; AAB2752.1; -
DR MGI: MG1:1298223; Birc1a.
DR InterPro: IPR001370; BIR.
DR Pfam: PF00653; BIR. 3.
DR SMART: SM00238; BIR_REPEAT_1; 1.
DR PROSITE: PS01282; BIR_REPEAT_2; 3.
DR PROSITE: PS50143; BIR_REPEAT_1; 1.
DR Apoptosis; Repeat; Multigene family.
FT REPEAT 60 127 BIR 1.
FT REPEAT 159 227 BIR 2.
FT REPEAT 278 345 BIR 3.
FT CONFLICT 343 343 I -> V (IN REF. 2).
FT CONFLICT 359 359 E -> K (IN REF. 2).
FT CONFLICT 624 624 D -> E (IN REF. 3).
FT CONFLICT 1092 1092 D -> N (IN REF. 3).
FT CONFLICT 1116 1116 G -> R (IN REF. 3).
FT CONFLICT 1123 1123 L -> H (IN REF. 1).
FT CONFLICT 1129 1129 T -> M (IN REF. 2).
FT CONFLICT 1140 1140 A -> V (IN REF. 3).
FT CONFLICT 1269 1269
SQ SEQUENCE 1403 AA; 158692 MW; B31630259595EB67 CRC64;

Query Match 52.8%; Score 141; DB 1; Length 1403;
Best Local Similarity 52.2%; Pred. No. 1.8e-10;
Matches 24; Conservative 5; Mismatches 17; Indels 0; Gaps 0;

OY 1 LAKAGFYIYIGDRAVACGKSLNMPKDNAMSEHLRHFPCCP 46
DB 161 LSAGCFVYTGKRDVYQCFSCGSLGNWBECDPMKXHAHWPACER 226

RESULT 14
BIRE_MOUSE STANDARD; PRT: 1403 AA.
AC 09R016; 09R029; P81703; 009122; 009121;
DT 20-AUG-2001 (Rel. 40, Created)
DT 20-AUG-2001 (Rel. 40, Last sequence update)
DT 20-AUG-2001 (Rel. 40, Last annotation update)
DE BACULOVIRAL IAP REPEAT-CONTAINING PROTEIN IE (NEURONAL APOPTOSIS

DE INHIBITORY PROTEIN 5).
GN BIRC1 OR NAIP5 OR NAIP-RS3.
OS Mus musculus (Mouse).
OC Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
OC Mammalia; Eutheria; Rodentia; Sciurognathi; Muridae; Murinae; Mus.
OX NCBI_TaxID=10090;
RN [1]
RP SEQUENCE FROM N.A.
RX MEDLINE-99431676; PubMed-10501978;
RA Huang S., Scharf J.M., Growney J.D., Endrizzi M.G., Dietrich W.F.;
RT "The mouse Naip gene cluster on Chromosome 13 encodes several distinct
RL functional transcripts.";
RM Mamm. Genome 10:1032-1035(1999).
RN [2]
RP SEQUENCE FROM N.A.
RX STRAIN-129/SV;
RC MEDLINE-99417674; PubMed-10486205;
RA Endrizzi M., Huang S., Scharf J.M., Kelter A.R., Wirth B.,
RA Kunzel L.M., Miller W., Dietrich W.F.;
RT "Comparative sequence analysis of the mouse and human Lgn1/SMA
RL interval.";
RL Genomics 60:137-151(1999).
RN [3]
RP SEQUENCE OF 82-168 FROM N.A.
RC STRAIN-129/SV;
RX MEDLINE-97131520; PubMed-8975718;
RA Scharf J.M., Damron D., Fritsella A., Bruno S., Beggs A.H.,
RA Kunzel L.M., Miller W., Dietrich W.F.;
RT "The mouse region syntenic for human spinal muscular atrophy lies
RL within the Lgn1 critical interval and contains multiple copies of Naip
RT exon 5.";
RL Genomics 18:405-417(1996).
CC -1- FUNCTION: PREVENTS MOTOR-NEURON APOPTOSIS INDUCED BY A VARIETY OF
CC SIGNALS.
CC -1- SIMILARITY: CONTAINS 3 BIR REPEATS.
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CC -----
DR EMBL: AF135492; AAD56764.1; -
DR EMBL: AF131205; AAD56760.1; -
DR EMBL: U66326; AAC52974.1; -
DR MGI: MG1:1298220; Birc1e.
DR InterPro: IPR001370; BIR.
DR Pfam: PF00653; BIR. 3.
DR SMART: SM00238; BIR. 3.
DR PROSITE: PS01282; BIR_REPEAT_1; 2.
DR PROSITE: PS50143; BIR_REPEAT_2; 3.
DR Apoptosis; Repeat; Multigene family.
FT REPEAT 60 127 BIR 1.
FT REPEAT 159 227 BIR 1.
FT REPEAT 278 345 BIR 2.
FT CONFLICT 92 92 K -> R (IN REF. 1).
FT CONFLICT 144 144 S -> R (IN REF. 1).
FT CONFLICT 242 242 S -> G (IN REF. 2).
FT CONFLICT 472 472 T -> A (IN REF. 2).
FT CONFLICT 516 516 A -> D (IN REF. 2).
FT CONFLICT 521 521 A -> T (IN REF. 2).
FT CONFLICT 533 533 V -> A (IN REF. 2).
FT CONFLICT 538 538 S -> I (IN REF. 2).
FT CONFLICT 538 538 S -> D (IN REF. 2).
FT CONFLICT 1092 1092 E -> D (IN REF. 2).
FT CONFLICT 1129 1129 H -> L (IN REF. 2).
FT CONFLICT 1137 1137 V -> Q (IN REF. 2).
FT CONFLICT 1242 1242 V -> I (IN REF. 2).
FT CONFLICT 1276 1276 D -> N (IN REF. 2).
SQ SEQUENCE 1403 AA; 159695 MW; B27F645043BCBC42 CRC64;

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Query Match 52.8%; Score 141; DB 1; Length 1403;
Best Local Similarity 52.2%; Pred. No. 1.8e-10;
Matches 24; Conservative 5; Mismatches 17; Indels 0; Gaps 0;

Search completed: January 7, 2002, 16:05:25
Job time: 1404 sec

OY 1 LAKAGFYIYIGPGRVACFACGKLSNWEKDNAMSEHLRHPKCP 46
181 LSAAGFVFTGKRDTVOCFSCGSLGNWEGDDPMKEHAKWPKCE 226

RESULT 15

BIRF_MOUSE

ID BIRF_MOUSE STANDARD: PRT; 1403 AA.

AC Q9JIB6; P81704; O09122; O09121;

DT 20-AUG-2001 (Rel. 40; Created)

DT 20-AUG-2001 (Rel. 40; Last sequence update)

DE BACULOVIRAL IAP REPEAT-CONTAINING PROTEIN 1F (NEURONAL APOPTOSIS

CN BIRCF OR NAIP6 OR NAIP-RS4.

OS Mus musculus (Mouse).

OC Eukaryota; Metazoa; Chordata; Vertebrata; Euteleostomi;

OX Mammalia; Eutheria; Rodentia; Sciurognathi; Muridae; Murinae; Mus.

NCBI_TaxID=10090;

RN (1)

RP SEQUENCE FROM N.A.

RX MEDLINE=20414747; PubMed=10958627;

RA Enderlitz M.G., Hadinoto V., Gromney J.D., Miller W., Dietrich W.F.;

RT "Genomic sequence analysis of the mouse Naip gene array.";

RL Genome Res. 10:1095-1102(2000).

RN (2)

RP SEQUENCE OF 82-168 FROM N.A.

RC STRAIN=129/SVJ;

RX MEDLINE=97131520; PubMed=8975718;

RA Scharf J.M., Damron D., Frisella A., Bruno S., Beggs A.H.,

RT Kunkel L.M., Dietrich W.F.;

RT "The mouse region syntenic for human spinal muscular atrophy lies

RT within the Lgn1 critical interval and contains multiple copies of Naip

RT exon 5.";

RL Genomics 38:405-417(1996).

CC -1- FUNCTION: PREVENTS MOTOR-NEURON APOPTOSIS INDUCED BY A VARIETY OF

CC SIGNALS.

CC -1- SIMILARITY: CONTAINS 3 BIR REPEATS.

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CC -----

DR EMBL: AF242431; AAF8751.1; -

DR EMBL: U66327; AAC52973.1; -

DR MGD: MGI:1298222; Birc1f.

DR InterPro: IPR001370; BIR.

DR Pfam: PF00653; BIR; 3.

DR SMART: SM00238; BIR; 3.

DR PROSITE: PS01282; BIR_REPEAT_1; 2.

DR PROSITE: PS50143; BIR_REPEAT_2; 3.

KM Apoptosis; Repeat; Multigene family.

FT REPEAT 60 127 BIR 1.

FT REPEAT 159 227 BIR 2.

FT REPEAT 278 345 BIR 3.

SQ SEQUENCE 1403 AA; 159823 MW; 9DA912503358C4E9 CRC64;

Query Match 52.8%; Score 141; DB 1; Length 1403;
Best Local Similarity 52.2%; Pred. No. 1.8e-10;

Matches 24; Conservative 5; Mismatches 17; Indels 0; Gaps 0;

OY 1 LAKAGFYIYIGPGRVACFACGKLSNWEKDNAMSEHLRHPKCP 46
181 LSAAGFVFTGKRDTVOCFSCGSLGNWEGDDPMKEHAKWPKCE 226

Tue Jan 8 08:23:53 2002

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